

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/087,857

Q68777

AMENDMENTS TO THE DRAWINGS

Please replace Figure 1 with the attached, amended Figure 1.

Attachment: One (1) Replacement Sheet

REMARKS

Formalities

Claims 1-18 are all the claims currently pending in this Application.

With the current Office Action, the Examiner returns a copy of the PTO/SB/08 A & B modified submitted with the January 8, 2004 IDS. However, the Examiner has crossed-out all the references indicating “No English Translations.” We note that the January 8, 2004 IDS was submitted with an English translation of a Japanese Office Action citing each of the references listed in the IDS, and that under MPEP 609.04(a) III, “Where the information listed is not in the English language, but was cited in a search report or other action by a foreign patent office in a counterpart foreign application, the requirement for a concise explanation of relevance can be satisfied by submitting an English-language version of the search report or action which indicates the degree of relevance found by the foreign office.”

Therefore, Applicants respectfully request that the Examiner return a signed and initialed copy of the modified PTO/SB/08 submitted with the January 8, 2004 IDS with the next Office Communication. Applicants attach hereto an additional copy of the modified PTO/SB/08, as well as an additional copy of the English translation of the Japanese Office Action as submitted on January 8, 2006, for the convenience of the Examiner.

Drawings

The drawings stand objected to. The Examiner notes that in Figure 1, the reference number 8 is used to indicate the transmitter of the base station and the transmission antenna of the mobile station. Applicants note that according to the specification, the transmission antenna

of the mobile station is reference number 18. Therefore, Applicants amend Figure 1 accordingly. Applicants respectfully request that the objection to the drawings be reconsidered and withdrawn.

Abstract

The Abstract of the Disclosure stands objected to because it is too long. With this Amendment, Applicants amend the Abstract of the Disclosure and respectfully request that the objection thereto be reconsidered and withdrawn.

Specification

The disclosure is objected to due to informalities. With this Amendment, Applicants amend the specification to correct these informalities and respectfully request that the objection thereto be reconsidered and withdrawn.

112 Rejections and Claim Amendments

Claims 1-18 are rejected under 35 U.S.C. § 112, second paragraph. With this Amendment, Applicants amend the claims, as shown, for purposes of clarity. Applicants respectfully request that the §112 rejection of the claims be reconsidered and withdrawn.

§103(a) Rejections

Claims 1-4, 6, 10-13, and 15 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Paulraj (U.S. Patent 6,351,499) in view of Austin (U.S. Patent 6,799,059). Claims 5, 7, 14, and 16 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Paulraj in view of Austin and Sourour (U.S. Patent 6,768,727). Claims 8, 9, 17, and 18 stand

rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Paulraj in view of Austin and Li (U.S. Patent 6,185,431). Applicants respectfully traverse these rejections.

Paulraj is generally directed to method for a wireless communication network (e.g. TDMA, FDMA, CDMA, OFDMA networks), in which spatially multiplexed data streams are modified based on a quality parameter indicating a quality of a down-link signal (Abstract). Specifically, Paulraj describes that a transmit unit produces k spatially multiplexed data streams, which are transmitted to a receiver via M antennas (col. 3, lines 43-52). The data is then received at the receiver, which uses the data to assess a quality parameter; “the quality parameter is used to adaptively adjust k such that the communication parameter of the channel is maximized” (col. 3, lines 53-58). There is no teaching or suggestion in Paulraj of determining any state of the up-link.

Austin is directed to a system and method for improving down-link signal quality in a mobile communication system in which the mobile station measures a signal quality of the down-link, generates a synchronization signal based on the down-link signal quality, and transmits the synchronization signal back to the base station, where the base station switches between antennas in accordance with the synchronization signal (Abstract). Austin also discusses that in an alternate embodiment, the base station estimates a signal quality of the up-link and generates the switching instruction based on the signal quality of the up-link (col. 7, lines 30-44). However, the Examiner relies on Austin as teaching the claimed limitation of a control portion which controls a transmission state based on an estimated transmission line state of an up-link and a transmission line state of a down-link. There is no teaching or suggestion in Austin of

using *both* up-link quality information and down-link quality information to control a transmission state. Further there is no teaching or suggestion in any of the cited references or in the knowledge available to one of skill in the art to modify the Austin reference so that the base station could somehow synthesize information related to *both* a down-link state and an up-link state to determine how to modify a transmission state.

Further, as discussed above, Applicants note that while Paulraj teaches modifying a parameter of the spatial multiplexing based on a quality of a down-link signal, *there is no teaching or suggestion of modifying any control of the transmission antennas of the transmit unit*. As recited in independent claims 1 and 11, controlling the transmission state comprises controlling at least one of a use, a ratio, a power, and a phase of the at least two transmission antennas.

Therefore, in view of the above, Applicants submit that the claims are patentable over the cited combinations of references and respectfully request that the §103(a) rejections of the claims be reconsidered and withdrawn.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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